Gulf of Mexico Alliance: Nutrient Reduction and Water Quality Priority Issue Teams
Poster Session: July 11, 2007
5:30 p.m. to 7:00 p.m.
Hilton Bayfront, St. Petersburg, Florida

Author(s)	Poster Title	Affiliation	Description
Poor, Noreen and Holmstrom, Kimberly	What can urban traffic tell us about atmospheric nitrogen deposition to Tampa Bay?	University of South Florida, College of Public Health	We have explored the relationship between highway traffic counts and atmospheric nitrogen oxides (NOx) concentrations at a monitoring site adjacent to Tampa Bay and have found strong correlations between average weekday traffic counts and average daily NOx concentrations. If we infer from these correlations that the change in average daily NOx concentration between the lowest and highest weekday traffic counts can be attributed to on-road vehicles, we can estimate the contribution of local mobile source emissions to nitrogen deposition to Tampa Bay and compare our results with similar estimates from community multi-scale air quality modeling.
Casper, Andrew	Evaluating the Importance of Reach-Scale (10-100m) Environmental Heterogeneity in the Water Quality of Coastal Rivers.	University of South Florida; Environmental Science, Policy, & Geography	
Casper, Andrew	Florida River Flow Patterns and the Atlantic Multidecadal Oscillation	University of South Florida; Environmental Science, Policy, & Geography	Details how multi-year patterns of Atlantic sea surface temperatures cause rather dramatic changes in river discharge (and thus any nutrients they are discharging). The work details how the effect is both very pronounced but also significantly different between the peninsular and panhandle Florida.

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Moreno, Max and Poor, Noreen	Role of Submerged Aquatic Vegetation as a Nutrient Buffer in Suburban Lakes	University of South Florida, College of Public Health	Suburban lakes may be a source or sink of nutrients that move with surface and subsurface waters to a coastal estuary. We hypothesize that in suburban lakes, submerged aquatic vegetation regulates the water concentrations of nitrogen and phosphorus both through uptake of nutrients into plant biomass and as a substrate for microbial biofilms that consume nutrients. Preliminary analysis of suburban lake water quality and vegetation coverage data supports this hypothesis. We present a dynamical model that illustrates the role of submerged aquatic vegetation in maintaining long-term stability in nutrient levels as a tool for assessing lake management options.
Luther, Mark	Nutrient sensors and continuous observations from ships of opportunity in the Northern Gulf	University of South Florida	The Alliance for Coastal Technologies is performing a demonstration of nutrient sensors. Vendors participating include WetLabs, Satlantic, YSI, and American Ecotech. Results from the sensor trials will be available in Spring 2008. The University of South Florida, in collaboration with the Gulf of Mexico Coastal Ocean Observing System (GCOOS), has obtained funding to install continuous ocean monitoring systems aboard petroleum tankers that regularly travel between Houston and Florida ports. The Seakeeper 1000 systems will monitor temperature, salinity, chlorophyll, turbidity, disolved oxygen, pH, and nitrate, as well as a standard suite of meteorological parameters along the ships' route. Data will be telemetered to shore via satellite and will be made available on the internet in near-real-time.

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Chen, Zhiqiang, Hu, Chuanmin and Muller-Karger, Frank E.	Recent advances in remote sensing of water quality in estuarine waters	College of Marine Science, USF	We present advances in monitoring of water quality indices (sediment/turbidity, CDOM and water clarity) in case-II waters, focusing on Tampa Bay as a case study and using MODIS and SeaWiFS images. We found that, after cross-calibration, atmospheric correction and data quality control, the remote sensing reflectance at MODIS 645 nm (250-m) and the band ratios of MODIS 469 nm (500-m) to 555 nm (500-m), respectively, show a good relationship with in situ turbidity and CDOM absorption coefficient measurements. The SeaWiFS-derived attenuation coefficient at 490 nm, based on a semi-analytical algorithm, is closely related to in situ Secchi disk depth measurements. These algorithms are robust and consistent for most of the Bay and across seasons, and thus can be applied to time series of MODIS and SeaWiFS images. These frequent, repeated and synoptic products collected over several years allow better understanding of forcings and changes of water quality in estuaries and show promise for migrating research tools into operations. We review quality variability and trends in Tampa Bay.